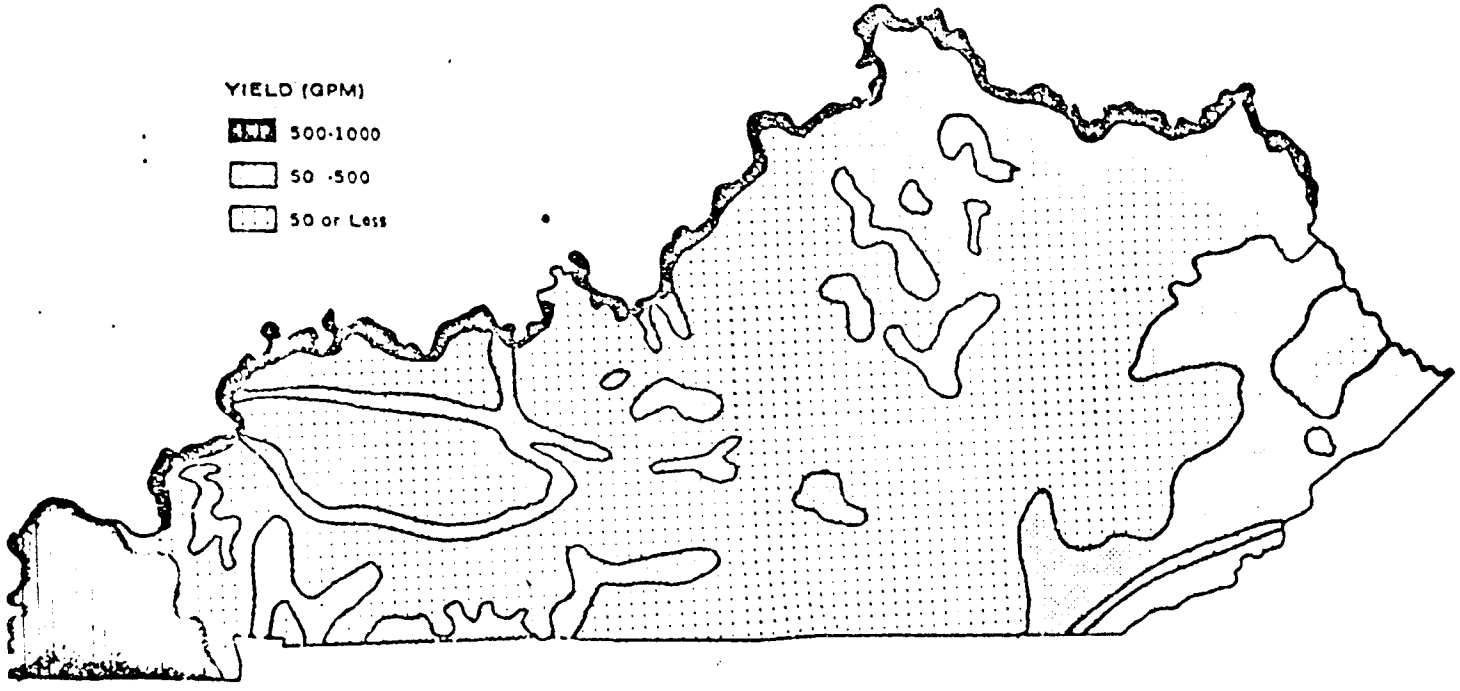
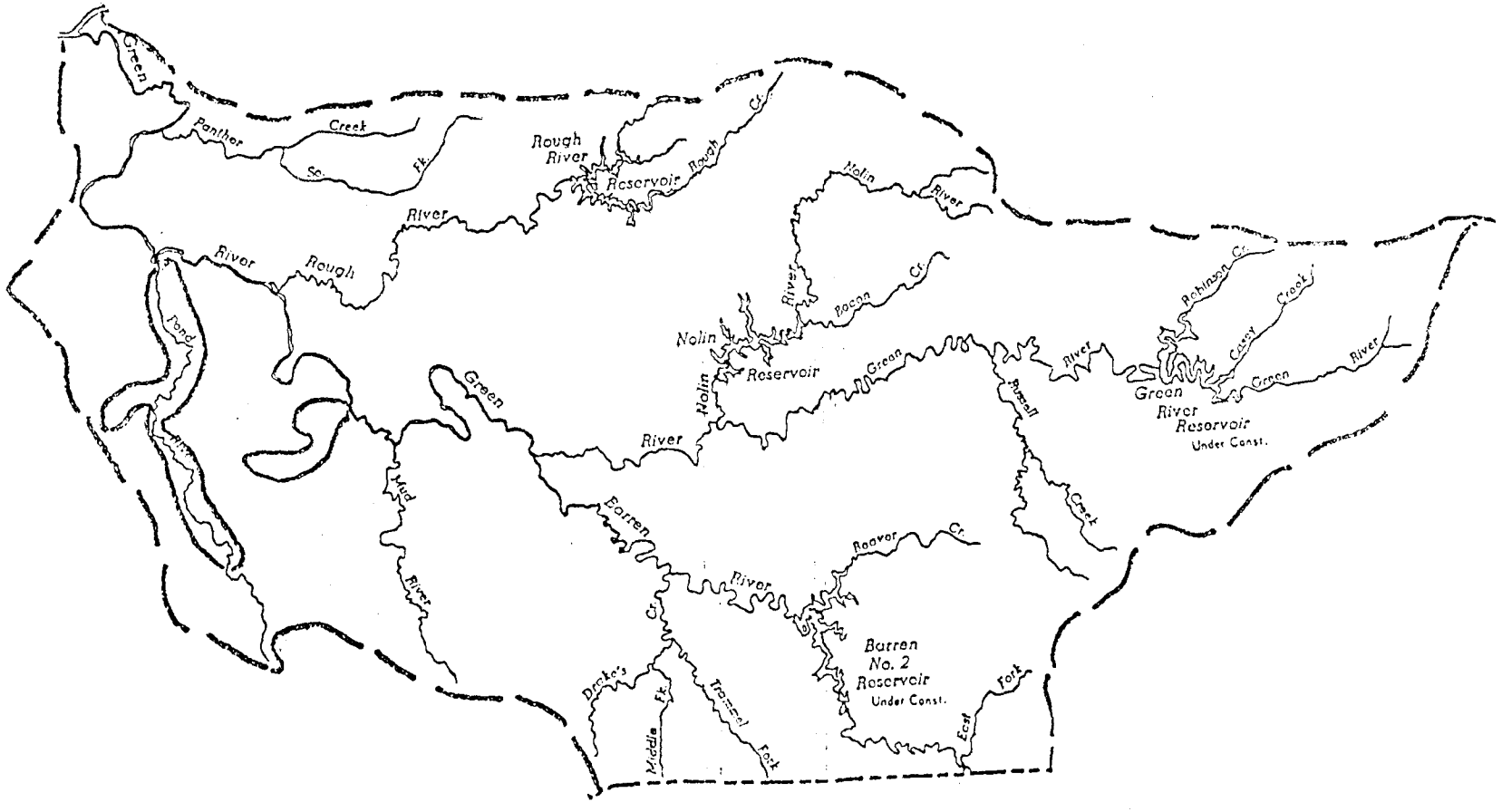
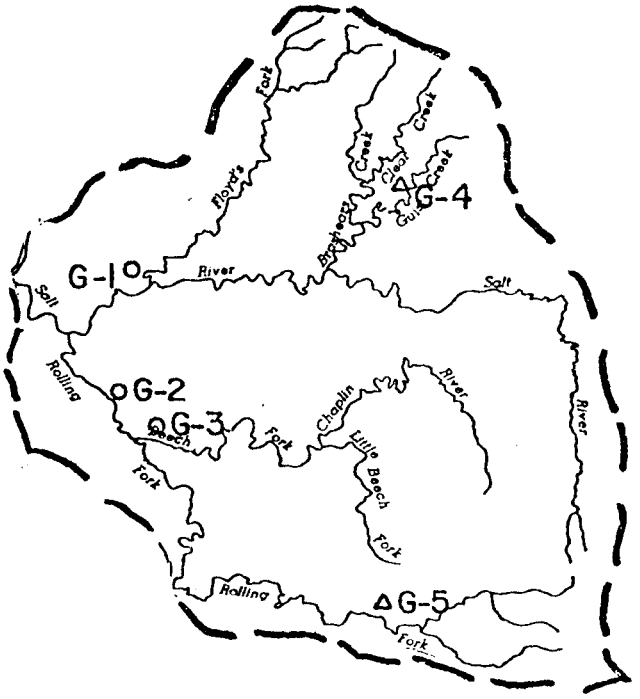
Groundwater Availability in Kentucky



STREAMS CONTINUOUSLY AFFECTED by MINE DRAINAGE





SALT RIVER

10 0 10 20 30 40

GRAPHIC SCALE IN MILES

Base Data: U. S. Geological Survey

THE SALT RIVER BASIN

The Salt River Basin is the most centrally located basin in Kentucky. It extends 70 miles into Kentucky through rolling farmland and is as wide as it is long. The water quality in this basin is influenced by dry season low flow, excessive erosion, and by the largest population center in Kentucky, Louisville, being partly located within this basin.

The first section of this report will provide a basin description covering both physical and population characteristics. The second section will analyze the water quality considering its causes and effects.

I. Basin Description

A. Geography

The Salt River flows into the Ohio River 352 miles above the mouth of of the Ohio River. The city of West Point at the mouth of the Salt River is 23 miles downstream of Louisville.

The Salt River drains 2,932 square miles of rolling farmland in central Kentucky. This drainage basin contains all or part of the following counties: Bullitt, Jefferson, Oldham, Henry, Shelby, Anderson, Mercer, Boyle, Casey, Marion, Taylor, Larue, Hardin, Nelson, Washington, and Spencer. In the Salt River Basin, there are five sub-basins with an area over 200 square miles. Beech Fork has approximately 750 square miles, Brashears Creek, Floyds Fork, and the Chaplin River all drain about 270 square miles, and the Rolling Fork drains 145 square miles.

B. Topography

The basin lies wholly within the Bluegrass Region which has a hilly to gently rolling topography from east to west with an area of "Knobs" in the northwestern section around the Fort Knox military reservation. This basin is drained by three major streams. These are the Salt River, the Rolling Fork and Beach Fork. The slope of the Salt River is 5.0 feet per mile (ft./mi.).

The slope of Rolling Fork averages 6 ft./mi. and the slope of the Beach Fork is 4 ft./mi.

The average slope of the major tributaries are Brashears Creek, 6 ft./mi., Chaplin River, 6.5 ft./mi., and Floyds Fork, 7 ft./mi. The elevation in this basin varies from 380 to 1,140 feet above sea level.

Slope, up to ten ft./mi., has a direct effect on the reaeration of a stream. With slopes from 0-2 ft./mi., the reaeration is low. Slopes from 3-6 ft./mi. give a medium reaeration while slopes of 7-10 ft./mi. give a high reaeration. These stream slopes provide moderate to good reaeration of the streams.

C. Geology

The base parent materials in this basin are limestone and dolomite, slate and shale. The limestone and dolomite through solution impart hardness to water and give rise to a bicarbonate type of hardness.

The groundwater availability in the Salt River Basin is low. Wells which yeild 100 gallons per minute (g.p.m.) are rare, the majority of the wells produce 50 g.p.m. or less. This limited availability of groundwater and the "Knob" topography are factors causing extremely low flow during the dry months of the year.

D. Hydrology

The stream flow in the Salt River Basin was selected at four gauging stations. The stations are (1) at Boston on the Rolling Fork, (2) at Bardstown on the Beach Fork, (3) Fisherville on Floyds Fork, and (4) at Shepherdsville on the Salt River.

For these stations, the period of record, drainage area, average flow, maximum flow, minimum flow, and the seven day ten year low flows are shown in Table G-6.

Presently, there are no major impoundages in the Salt River to provide for low flow augmentation. The Corps of Engineers has been authorized to construct the Taylorsville Reservoir which will provide low flow augmentation of 60 cfs.

The Salt River at Shepherdsville is very flashy as shown in comparison of the average flow to the maximum. The ratio of average to maximum is 52. Most of the streams at some time of the year have zero flow. The low flow contributes to problems with organic waste loads and sediment.

E. Population

There are 507,232 people in this basin (see Table G-2). The SMSA of Louisville accounts for sixty-four per cent of the population. This portion of Louisville (Jefferson County) is located in the Pond Creek and Floyds Fork Sub-basins. Louisville has completed a 201 Facility Plan and is developing a 208 area wide waste water management plan. As the 201 plan is implemented, the effect of the 250 discharge into Pond Creek and Floyds Fork will be eliminated with the initial interceptors planned for completion in 1977 and all discharges eliminated by 1985. Roughly seven per cent of the population is located in Hardin County at Fort Knox. The rest of the population is located in small towns and rural populaton throughout the basin. There are eight towns (13,679 people who do not have sewers and these represent possible sources of pollution from septic tanks and other inadequate treatment devices.

TABLE G-6

SURFACE WATER RECORDS FOR THE SALT RIVER BASIN

STATION	PERIOD OF RECORD	DRAINAGE AREA	AVERAGE FLOW	MAXIMUM FLOW	MINIMUM FLOW	7-day/10-yr. LOW FLOW
Salt River at Shepherdsville	38 yr.	1,197 sq.mi.	1,551 cfs, 1.3cfs* / sq.mi.	78,200 cfs, 65cfs / sq.mi.	0 cfs	0.6 cfs
	wtr/yr 1976		1,552 cfs, 1.3cfs / sq.mi.	30,100 cfs, 25cfs / sq.mi.	11 cfs, 0.0cfs / sq.mi.	
Floyds Fork at Fisherville	32 yr.	138 sq.mi.	173 cfs, 1.3cfs / sq.mi.	28,500 cfs, 206cf / q.mi.	0 cfs	0 cfs
	wtr/yr 1976		173 cfs, 1.3cfs / sq.mi.	8,080 cfs, 59cfs / sq.mi.	1.0 cfs, 0.0cfs / sq.mi.	
Rolling Fork near Boston	38 yr	1,299 sq.mi.	1,752 cfs, 1.3cfs / sq.mi.	50,500 cfs, 39cfs / sq.mi.	0.4 cfs, 0.0cfs / sq.mi.	1.7 cfs
	wtr/yr 1976		1,933 cfs, 1.5cfs / sq.mi.	32,800 cfs, 25cfs / sq.mi.	32 cfs, 0.0cfs / sq.mi.	
Beech Fork at Bardstown	wtr/yr 1976**	669 sq.mi.		27,100 cfs, 41cfs / sq.mi.		0.2 cfs

* Cubic feet per second

** Operated as a continuous-record gaging station 1939-74, and as a crest-stage partial-record station since 1975.

NOTE: Data is taken from "Surface Water Records in Kentucky" by the United States Geological Survey. The 7-day/10-yr. low flow was taken from the waste load allocation produced as a component of the 303e River Basin Continuing Planning Process.

II. Basin Water Quality

In this section of the report the actual water quality in the Salt River Basin will be examined, along with some of the major factors involved. The major water uses in the basin are also presented.

A. A Description of Sampling Stations

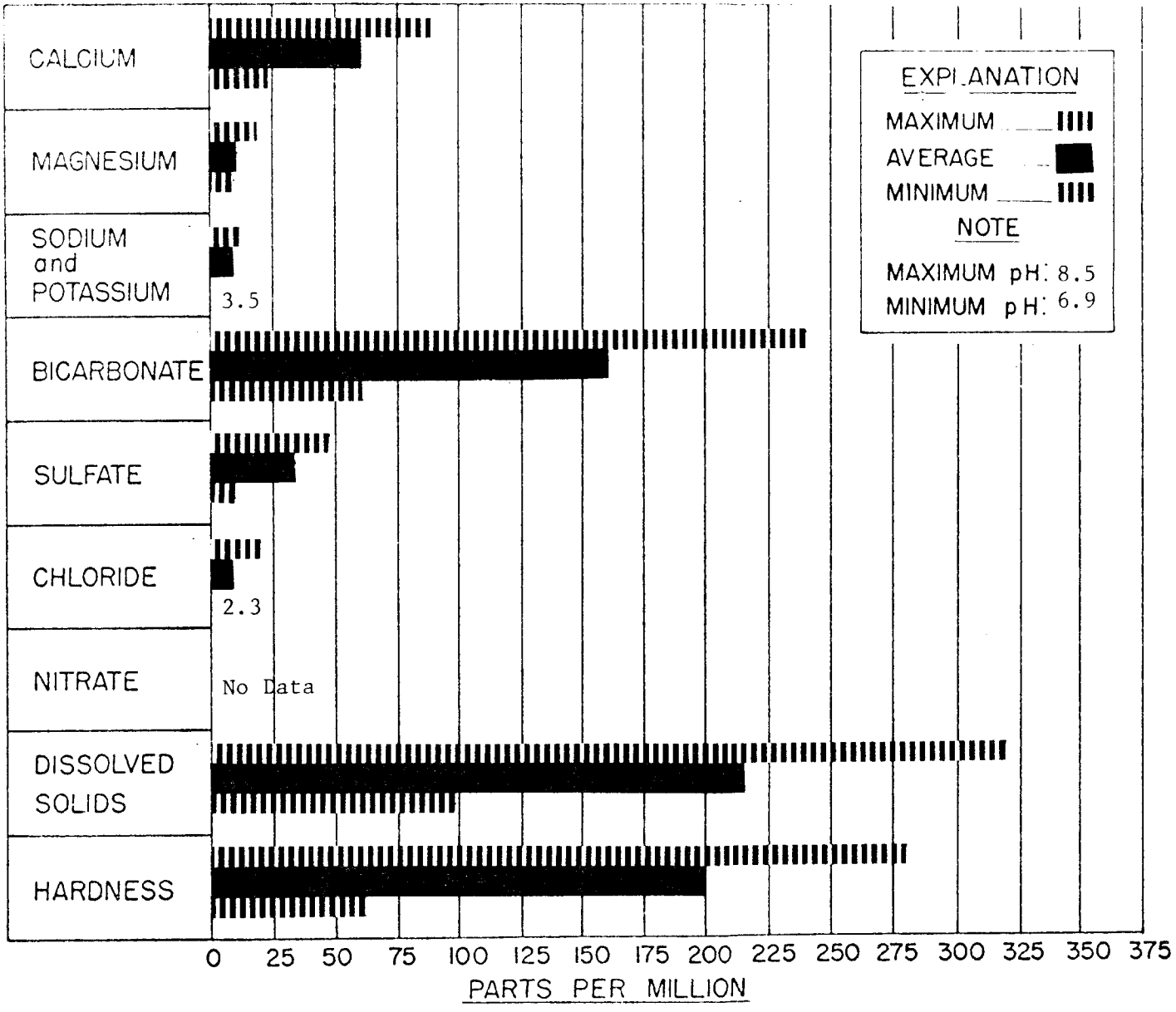
There is one station in this basin with sufficient data to describe water quality. It is located at Shepherdsville, Kentucky, 23 miles upstream from the mouth of the Salt River with drainage basin area of 1,200 sq. mi. or 41 per cent of the basin.

This station was chosen due to the location and length of record. It is believed that the water quality measured at this station is representative of the water quality in most of the surface streams in the basin.

B. General Chemical Water Quality

The chemical composition of water is best defined by grouping dissolved elements which compose the total dissolved solids. By examining the relationships of groups of chemicals, the type of water whether hard or soft, salty, acid or high in sulfates reflects the mix of surface and groundwater. The chemical characteristics of a stream when viewed over a long period of time is primarily from surface water. The type of rock formation and soils which the surface water contacts causes this predominate chemical characteristic. The contribution of groundwater, which is generally higher in dissolved solids than surface water, can be shown by selecting the low flow period for data analyses. The general character of waters in Kentucky is one of moderate hardness caused by calcium and magnesium salts.

In the Salt River Basin, there is a high bicarbonate ion content giving the water a high bicarbonate hardness. This is due to the limestone bedrock of the area. In all other respects the quality of the surface water is considered to be excellent. The graph of water quality indicates the variation from the



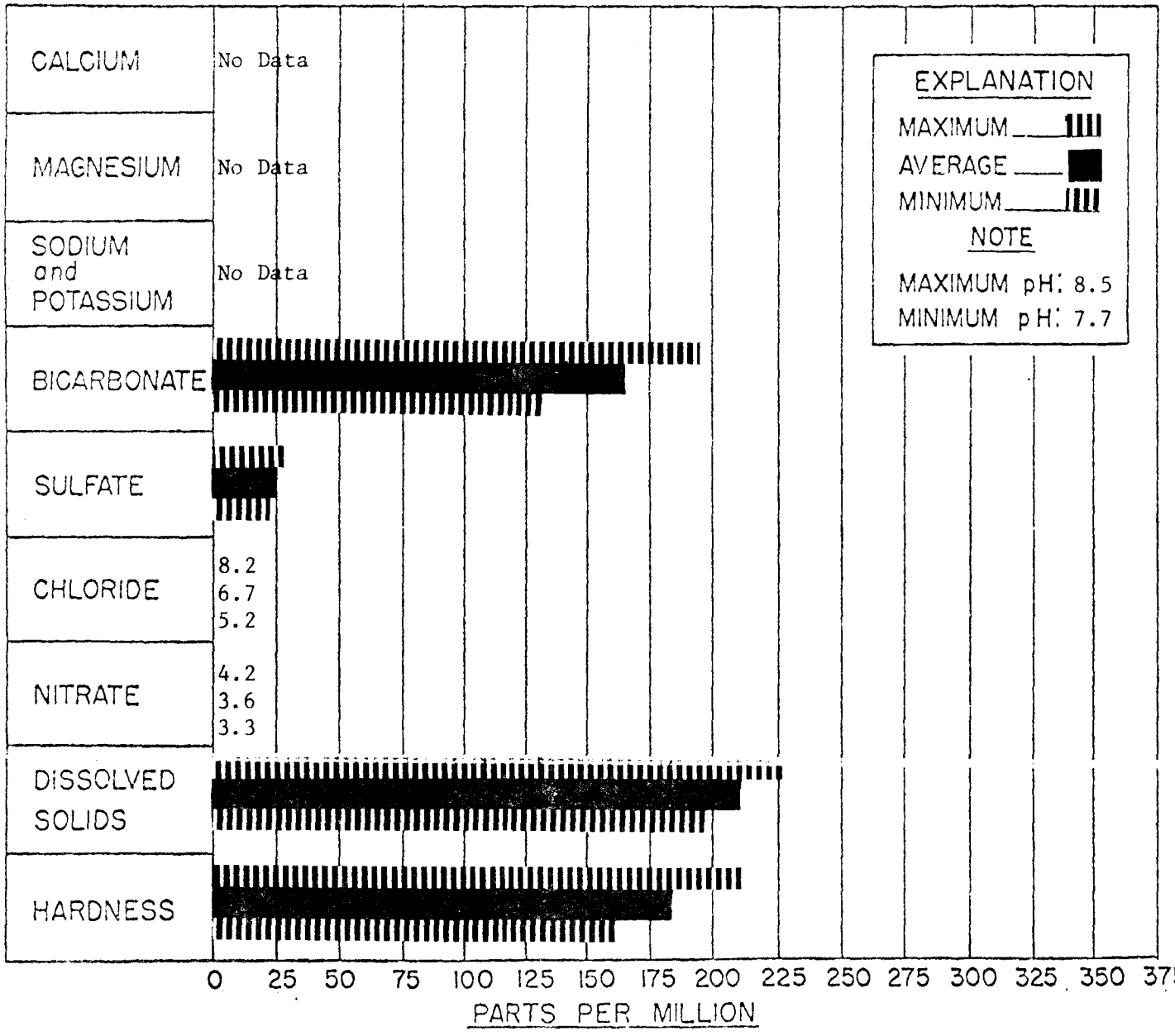
MAXIMUM, AVERAGE, and MINIMUM concentrations of dissolved constituents,

FIGURE G-1

Salt River

Shepherdsville

11-65 to 11-74



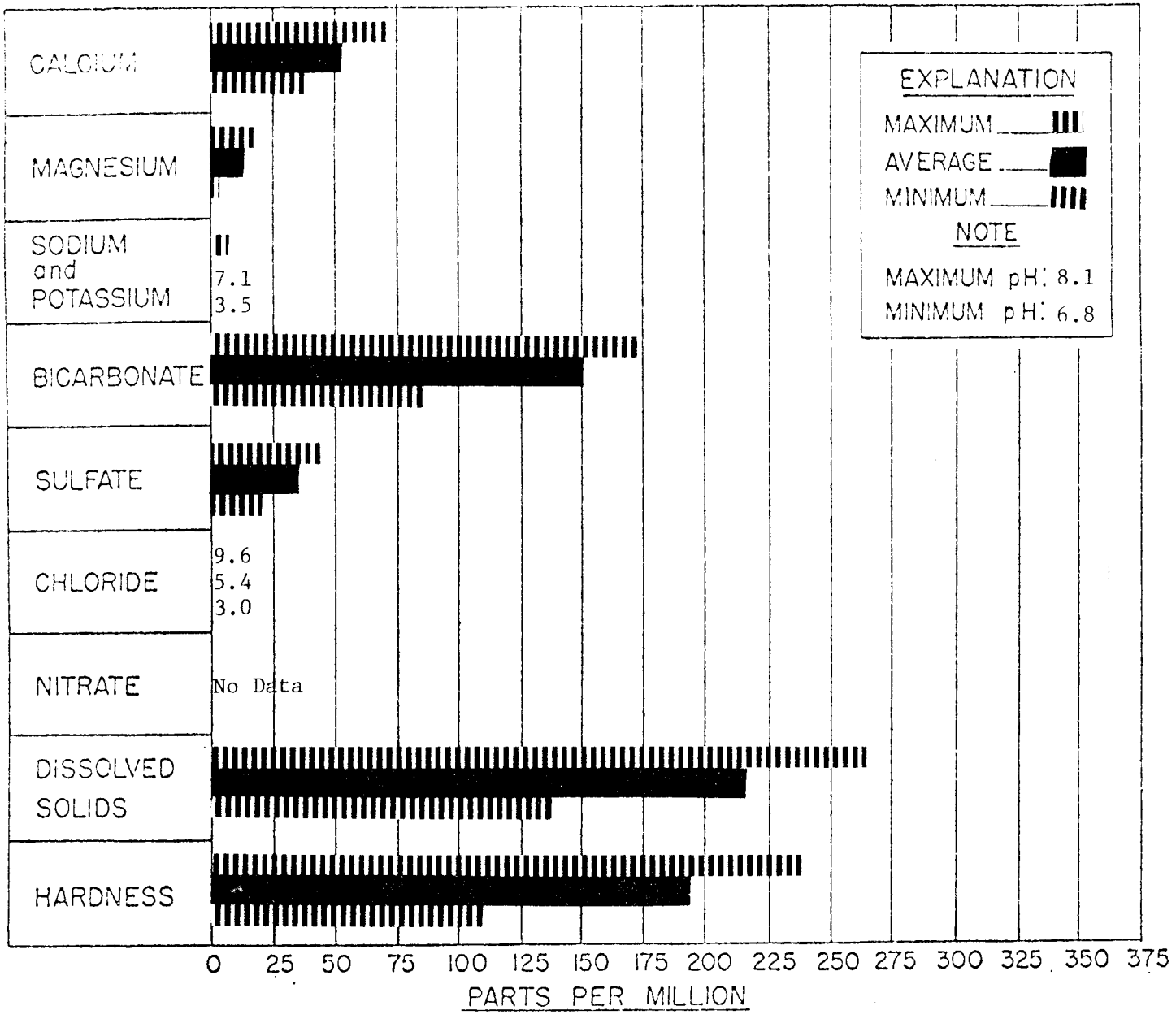
MAXIMUM, AVERAGE, and MINIMUM concentrations of dissolved constituents

FIGURE G-2

Rolling Fork

Boston

10-70 to 9-72



MAXIMUM, AVERAGE, and MINIMUM concentrations of dissolved constituents

FIGURE G-3

Rolling Fork

Lebanon Junction

10-74 to 12-75

average is low and, therefore, uniformity of water quality allows stable operation of water supply treatment plant and industry water usage is enhanced.

C. Trace Chemical Water Quality

Trace elements (under 5 mg/l) are separated from the general chemical background of this report because of their influence on human health. Generally, these materials are "heavy" metals, which in sufficient concentrations have a toxic or otherwise adverse effect on human and animal or plant life. Levels for many of these elements have been established for years in the Drinking Water Standards and more recently through the State-Federal Water Quality Standards.

Trace chemicals in the surface water of the Salt River Basin in Kentucky were measured as being within Kentucky-Federal Water Quality Standards.

D. Waste Load Effects on Water Quality

Biochemically degradable wastes impose a load on the dissolved oxygen recourses of a stream. Such a waste load is considered to have an effect upon water quality when they cause the dissolved oxygen (D.O.) concentration to drop below the Kentucky Water Quality Standard of 5.0 mg/l. Based on a model developed for the Kentucky Continuing Planning Process for River Basin Management Planning, 596 miles of streams in the basin that receive waste discharges were evaluated.. On the basis of present treatment levels and once on 10 year 7 day low flows the model shows 160 stream miles (28 per cent of the miles modeled) are affected by discharges.

The types of facilities affecting the streams and the length affected are 61 miles (11 per cent) by municipal discharges; 8 miles (1.7 per cent) by industrial discharges, and 91 miles (15 per cent) by other discharges. A miscellaneous discharge is one that is privately owned, eg. subdivisions, schools, etc. (See Table G-5)

E. Non-Point Source Effects

The primary non-point source of pollution in the Salt River is from soil erosion. The sediment pollution comes from field and stream bank erosion. In 1973 about 100 sq. mi. associated with agricultural crop land had high erosion rates and there are approximately 50 miles of stream banks that are a critical sediment source.

F. Water Uses in the Basin

Water uses in the basin are public and industrial, recreation, fish and wildlife, and agricultural. The total public and industrial usage in the Salt River Basin is 10 million gallons per day (m.g.d.) from surface water at 9.6 m.g.d. and groundwater at 0.4 m.g.d. The industrial usage is 5.5 m.g.d., (groundwater 0.1 m.g.d., surface water 5.4 m.g.d.) and the public usage is 4.5 m.g.d., (groundwater 0.4 m.g.d. and surface water 4.1 m.g.d.). Water withdrawal during periods of low flow is not a problem since during periods of low flow the water is withdrawn from reservoirs.

There are no large commercial water recreation sites in this basin.

It is generally understood that the Salt River Basin is good in sport fishing.

The Kentucky Department of Fish and Wildlife Resources is studying the sport fishing in this basin and a report will be published in the next two years.

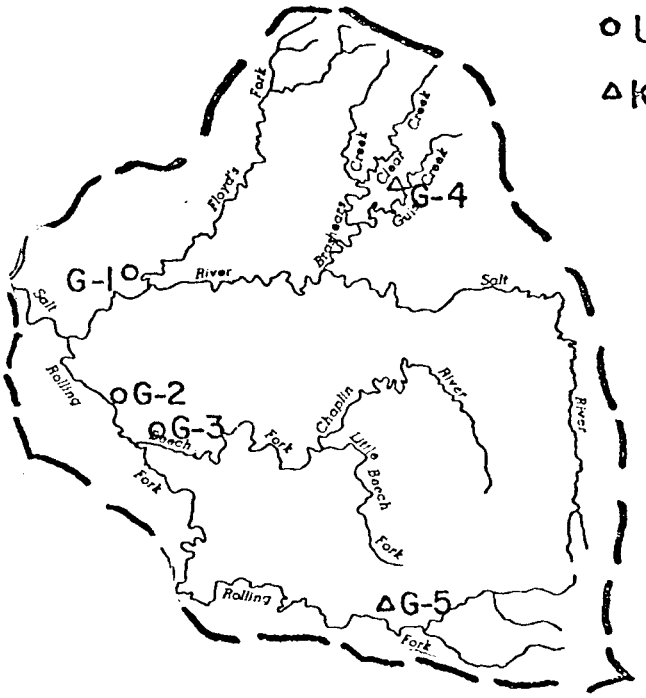
G. Water Quality Changes

Sedimentation data that was collected in the period of 1948 to 1954 indicated that the Salt River Basin had the largest sediment load of any basin in Kentucky. The effects of agricultural runoff and logging operations in relation to the topography created a difficult control problem from these sources of sediment load. Continued effort by the U.S.D.A. SCS by encouraging proper soil utilization should assist in controlling the sediment load problem.

The problem associated with municipal waste discharge into Pond Creek and Floyds Fork will be corrected in a comparatively short time by intercepting the waste and conveying this waste to a treatment facility to be located on the Ohio River. Therefore, the expected changes in water quality are for improvement in both sediment load and from maintenance of D.O. levels at or above the level of the State-Federal Water Quality Standards.

III. Summary

The general chemical and trace water quality in Kentucky's Salt River Basin has been shown to be of high quality. There are problems, however, related to other aspects of water quality in the basin that require attention and action to be corrected. Severe soil erosion from farming practices presents a major problem with excessive sediment in the water. Treated wastes discharged from municipal, independent and industrial sources effect the water quality of the basin's streams. Upgrading the treatment facility and improvement in operation and maintenance of waste treatment facilities is needed. A program of operator licensing and education to improve operation and maintenance is a significant part of the Division of Water Quality operations.



SALT RIVER

o U.S.G.S.

Δ Kentucky Division of Water

10 0 10 20 30 40

GRAPHIC SCALE IN MILES

Base Data: U. S. Geological Survey

STATION KEY

G-1 SALT RIVER AT SHEPHERDSVILLE
G-2 ROLLING FORK AT LEBANON JUNCTION
G-3 ROLLING FORK AT BOSTON
G-4 GUIST CREEK AT SHELBYVILLE
G-5 ROLLING FORK AT LEBANON

TABLE G-2

Population in the Salt River Basin

County	City	Urban Population in Basin	Total Population in Basin	Area (sq. mi.)
Casey			4,150	94
Taylor			100	28
Larue			2,600	89
Hardin			49,000	140
	Fort Knox	37,608		
	Radcliff	7,881		
	Total	45,489		
Bullitt			26,090	300
	Mt. Washington	2,020		
Jefferson			323,000	220
	Louisville	79,919		
	Seneca Gardens	822		
	Strathmore	1,004		
	Jeffersontown	9,701		
	Fern Creek	6,000		
	Beuchel	9,000		
	Audubon Park	1,862		
	Newburg	4,000		
	Okolona	17,643		
	Prairie Village	3,000		
	Fairdale	2,500		
	Glengary	1,500		
	Valley	3,500		
	Medora	300		
	Total	166,882		
Oldham			5,750	64
	Crestwood	900		
	Pewee Valley	950		
		1,850		
Henry			1,087	14
	Pleasureville	747		
Shelby			15,900	314
	Shelbyville	4,182		
	Simpsonville	628		
	Veachland	700		
	Total	5,510		
Anderson			7,500	140
	Lawrenceburg	3,579		
	Stringtown	300		
		3,879		
Mercer			11,800	150
	Harrodsburg	6,741		
	Salvisa	350		
		7,091		

County	City		Urban Population in Basin	Total Population in Basin	Area (sq. mi.)
Boyle				4,600	100
	Mitchellsburg		500		
	Perryville		730		
		Total	1,230		
Marion					
	Bradfordsville		338	16,700	343
Nelson				23,480	437
	New Haven		977		
	Bardstown		5,816		
		Total	6,793		
Washington				10,730	307
	Loretto		985		
	Springfield		2,961		
			3,946		
Spencer				5,492	192
	Taylorsville		897		
		TOTAL	245,925	507,232	2,932

Source: 1970 U. S. Census as reported in the Rand McNally "Standard Reference Map and Guide of Kentucky"

TABLE G-3

Water Quality Data for Salt River Basin

Station	Beg. Date	End Date	Mean	Max.	Min.	#OBS	S
STORET #00400	pH Specific Units, Ky. Std. 6 LT pH LT 9						
Salt R., Shepherdsville	75/02/14	75/02/14	7.2			1	
USGS #03298500	70/04/03	72/07/26	7.7	8.4	7.0	9	.444
	65/11/09	74/11/-	7.8	8.5	6.9	39	.5
Rolling Fk., Nr Leb Jct.	76/01/06	76/10/28	6.9	7.5	6.1	11	.425
USGS #03301630	74/01/08	76/10/28	7.2	8.1	6.1	26	.406
Rolling Fk., Nr Boston	70/10/05	72/09/01	8.2	8.5	7.7	3	.416
USGS #03301500							
STORET #00095	Conductivity Micro Mhos, Ky. Std 800 micro mhos						
Salt R., Shepherdsville	75/02/14	75/06/25	410	420	400	2	14.1
	70/04/03	74/06/11	403	537	176	18	81.5
	65/11/09	74/06/-	400	540	170	49	80
Rolling Fk. Nr Leb. Jct.	76/01/06	76/11/30	330.4	430.0	140.0	12	87.164
	74/10/08	76/11/30	347.6	455.0	140.0	27	73.829
Rolling Fk. Nr Boston	70/10/05	72/09/01	363	421	315	3	53.6
STORET # 70300	Residue mg/l Ky. Std. 500 mg/l						
Salt R., Shepherdsville	70/04/03	72/07/26	249	332	114	9	60.2
	65/11/09	72/07/26	248	336	114	37	49.6
	53/12/08	72/07/26	226	336	95	72	48.7
Rolling Fk. Nr Leb. Jct.	76/01/06	76/10/28	194.0	240.0	102.0	10	44.325
	74/10/08	76/10/28	208.7	266.0	102.0	25	40.073
Rolling Fk. Nr Boston	70/10/05	72/09/01	210	226	198	3	14.4
STORET #00410	Alkalinity mg/l, No standard						
Salt R., Shepherdsville	70/04/03	72/07/26	168	241	62	9	47.7
	66/10/19	72/07/26	167	241	62	17	38.3
Rolling Fk. Nr Leb. Jct.	76/01/06	76/10/28	132.9	174.0	62.0	10	37.617
	74/10/08	76/10/28	143.8	193.0	62.0	25	33.771
Rolling Fk. Nr Boston	70/10/05	72/09/01	162	192	130	3	31.0

Table G-3
Continued

Station	Beg. Date	End Date	Mean	Max.	Min.	#OBS	S
STORET #00900	Hardness mg/l, 0-60 Soft, 61-120 Mod.Hard, 121-181 + Very Hard						
Salt R., Shepherdsville	70/04/03	72/07/26	203	280	80	9	53.3
	65/11/09	72/07/26	206	280	80	37	44.4
Rolling Fk. Nr Leb. Jct.	76/01/06	76/10/28	162.8	220.0	78.0	10	47.076
	74/10/08	76/10/28	176.3	240.0	78.0	25	39.879
Rolling Fk. Nr Leb.Jct.	70/10/05	72/09/01	183	210	160	3	25.2
STORET #00950	Fluoride mg/l, Ky. Std. 1.0 mg/l						
Salt R. Shepherdsville	70/10/05	72/07/26	0.22	0.30	0.20	4	.0500
	65/11/09	72/07/26	0.21	0.30	0.10	8	.0835
Rolling Fk. Nr Leb. Jct.	76/01/06	76/10/28	.264	.500	.100	11	.112
	74/10/08	76/10/28	.02	.500	.000	26	.105
Rolling Fk. Nr Boston	70/10/05	72/09/01	0.20	0.20		3	.0000
STORET #00915	Calcium mg/l, No Standard						
Salt R. Shepherdsville	70/04/03	72/07/26	59	90	26	3	32.0
	65/11/09	72/07/26	66	90	26	7	20.0
Rolling Fk. Nr Leb.Jct.	76/01/66	76/10/28	47.4	61.0	24.0	10	12.140
	74.10/08	76/10/28	51.5	71.0	24.0	25	10.856
STORET #00925	Magnesium mg/l, No standard						
Salt R., Shepherdsville	70/04/03	72/07/26	9.2	13.0	3.7	3	4.90
	65/11/09	72/07/26	12.5	18.0	3.7	7	4.45
Rolling Fk., Nr Leb Jct.	76/01/06	76/10/28	11.1	17.0	4.3	10	4.021
	74/10/08	76/10/28	11.6	17.0	4.3	25	3.143
STORET #01049	Lead ug/l (micro-grams per liter), Ky. Std. 50 ug/l						
Salt R., Shepherdsville	75/02/14	75/06/25	2.3	3.0	1.0	3	1.15
	74/03/26	74/09/05	3.7	9.0	0.0	6	3.50
Rolling Fk. Nr Leb. Jct.	76/01/06	76/07/07	3.3	6.0	0.0	3	3.055
	74/10/08	76/07.07	4.1	10.0	.000	7	3.579

Table G-3
Continued

Station	Beg. Date	End Date	Mean	Max.	Min.	#OBS.	S
STORET #01000	Arsenic ug/l, Ky. Std. 50 ug/l						
Salt R., Shepherdsville	75/02/14	75/06/25	0.0	0.0	0.0	3	0.0
	74/03/26	74/09/05	2.5	4.0	1.0	6	1.38
Rolling Fk. Nr Leb Jct.	76/01/06	76/07/07	.3	1.0	0.0	3	.580
	74/10/08	76/07/07	.5	1.0	.000	8	.535
STORET #01025	Cadmium ug/l, Ky. Std. 100 ug/l						
Salt R., Shepherdsville	75/02/14	75/06/25	0.0	0.0	0.0	3	0.0
	74/03/26	74/09/05	0.3	1.0	0.0	6	0.52
Rolling Fk. Nr Leb Jct.	76/01/06	76/07/07	.7	1.0	0.0	3	.580
	74/10/08	76/07/07	1.9	7.0	.000	8	2.416
STORET #01030	Chromium ug/l, Ky. Std. 50 ug/l						
Salt R., Shephardsville	75/02/14	75/06/25	1.0	3.0	0.0	3	1.73
	74/03/26	74/09/05	0.8	3.0	0.0	6	1.17
Rolling Fk. Nr Leb Jct.	76/01/06	76/07/07	0.0	0.0	0.0	3	0.0
	74/10/08	76/07/07	.3	2.0	.000	8	.707
STORET #00080	Color Platinum Cobalt Units, Prop. EPA Std. 75 Units.						
Salt R., Shepherdsville	70/04/03	72/07/26	52	140	5	3	76.5
	65/11/09	72/07/26	26	140	1	7	50.3
STORET #00930	Sodium mg/l, No Standard						
Salt R., Shepherdsville	70/04/03	72/07/26	6.8	12.0	2.0	3	5.01
	65/11/09	72/07/26	6.6	12.0	2.0	7	2.95
Rolling Fk., Nr Leb. Jct.	76/01/06	76/10/28	4.0	6.1	1.4	10	1.473
	74/10/08	76/10/28	4.3	7.5	1.4	25	1.437
STORET #00935	Potassium mg/l, No Standard						
Salt R., Shepherdsville	70/04/03	72/07/26	3.1	4.0	2.3	3	0.85
	65/11/09	72/07/26	2.8	4.0	1.5	7	0.89
Rolling Fk.,Nr Leb. Jct.	76/01/06	76/10/28	2.8	4.1	1.5	10	.972
	74/10/08	76/10/28	2.7	4.1	1.2	25	.912

Table G-3
Continued

Station	Beg. Date	End Date	Mean	Max.	Min.	#OBS	S
STORET #00940	Chloride mg/l, proposed EPA Std. 250 mg/l						
Salt R., Shepherdsville	70/04/03	72/07/26	9.1	15.0	3.0	9	3.25
	65/11/09	72/07/26	8.8	19.0	3.0	37	2.90
Rolling Fk. Nr Leb. Jct.	76/01/06	76/10/28	5.0	6.8	2.3	10	1.483
	74/10/08	76/10/28	5.2	9.6	2.3	25	1.791
Rolling Fk. N. Boston	70/10/05	72/09/01	6.7	8.2	5.2	3	1.50
STORET #00945	Sulfate mg/l, proposed EPA Std. 250 mg/l						
Salt R., Shepherdsville	70/04/03	72/07/26	35	42	16	9	8.43
	65/11/09	72/07/26	35	48	16	37	7.76
Rolling Fk. Nr Leb. Jct.	76/01/06	76/10/28	28.5	43.0	14.0	10	9.229
	74/10/08	76/10/28	29.6	43.0	14.0	25	7.082
Rolling Fk. nr. Boston	70/10/75	72/09/01	25	27	22	3	2.52
	(No Data listed for 1976)						
STORET #71851	Nitrate mg/l, prop EPA Std 10 mg/l						
Salt R, Shepherdsville	70/04/03	72/07/26	5.5	11.0	1.5	9	3.02
	65/11/09	72/07/26	5.1	12.0	1.1	37	2.88
Rolling Fk., Boston	70/10/05	72/09/01	3.6	4.2	3.3	3	0.52
Bacteriological Data							
Total Coliform Colonies per 100 ml. STORET #31503 Ky. Std. 1000/100 ml							
Fecal Coliform Colonies per 100 ml. STORET #31616							
Guist Cr. Shelbyville WPI							
T. Coliform	75/01/30	75/12/23	302	2900	10	12	
	74/04/15	75/12/23	688	6800	10	17	
Salt R, Shepherdsville							
T. Coliform	75/01/30	75/12/17	5278	28000	100	11	
F. Coliform	75/05/15	75/12/17	945	6233	0	8	
Rolling Fk. Lebanon Ky. WPI	T C - No Data						S
T. Coliform	76/01/06	76/11/30	2151.2	12000.0	8.0	11	3639.65
	T C - No Data						
	F C	75/02/12	76/11/30	2237.2	12000.0	8.0	21 3039.26

Table G-4

Municipal Population and Construction Grants Status
in the Salt River Basin in Kentucky

County	City	Population	Project Type	Comments
Anderson	Lawrenceburg	3,579	1	Active
	(Alton Water District)	160	2	Active
Bullitt	Shepherdsville	2,769	1	Active
	Mt. Washington	2,020	none	Sewers/STP
	Lebanon Junction	1,571	1	Active
Henry	Eminence	2,225	none	Sewers/STP
Jefferson	Jeffersontown	9,701	2 & 3	Active
	Okolona	17,643	2	Active
			3	Pending
Marion	Lebanon	5,528	1	Active
Mercer	Harrodsburg	6,741	1 & 2	Active
Nelson	Bardstown	5,816	1	Active
			2	Pending
	New Haven	977	none	Sewers/STP
	Bloomfield	1,072	none	Sewers/STP
Shelby	Shelbyville (San. Dist. No. 1)	4,182	1	Active
	Simpsonville	628	1	Active
Washington	Springfield	2,761	1	Active

NOTE: Project type is related to the grant process step applied for or active for each municipality. Step 1 is the preliminary studies (201 Facilities Plan) required before design of the facilities. Step 2 is the design phase of the project, and Step 3 is the construction of facilities for the collection and treatment of wastewaters.

The comments relate to the status of the grant. Active indicates the project is funded and underway. Pending indicates that application for a grant has been made and is pending approval. No sewers indicates that the municipality does not presently have a comprehensive sewer system. Sewers/STP indicates the municipality is now served by sewers and treatment facilities.

The source of this information was the 1970 U. S. Census and the FY 77 construction grants list for Kentucky.

TABLE G-5

Organic Loads Affecting Streams in the Salt River Basin

Length of streams to which treated organic loads are discharges		596 miles
Stream length for which dissolved oxygen is predicted to be below 5 mg/l during periods of low flow		160 miles
Stream length for which dissolved oxygen is predicted to be below 5 mg/l during periods of low flow	Municipal Discharges	66 miles
	Industrial Discharges	8 miles
	Other Discharges	91 miles

NOTE: This information is from the waste load allocation for Kentucky and is an output from the 303e river basin planning effort. The values indicate the stream miles in which the dissolved oxygen is predicted to be less than 5 mg/l when the stream flow is less than the once in ten year seven day (Q_{10-7}) low flow.